



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/822,727

04/13/2004

Raulf M. Polichar

000479.00116

2863

22907

7590

03/24/2006

BANNER & WITCOFF

1001 G STREET N W

SUITE 1100

WASHINGTON, DC 20001

EXAMINER

GAGLIARDI, ALBERT J

ART UNIT

PAPER NUMBER

2884

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/822,727

Applicant(s)

POLICHAR ET AL.

Examiner

Albert J. Gagliardi

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 1304 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/04, 12/05
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Comment on Submissions*

1. This Office Action is responsive to submissions of 13 April 2004.

### *Information Disclosure Statement*

The information disclosure statement filed 6 July 2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it some of the listed references do not include a date of publication. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Craig *et al.* (US 6,580,079).

Regarding claim 1, *Craig* discloses (Fig. 4) a broad spectrum neutron detector comprising a thermal neutron sensitive scintillator film (sheet) (400; col. 6, lines 4-5) interleaved with a hydrogenous thermalizing media (410; col. 6, lines 9-13).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-6, 8-14, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grodzins (US 2005/0023479 A1).

Regarding claim 2, *Grodzins* discloses (Figs. 3, 4 and 7) a broad spectrum neutron detector comprising a thermal neutron sensitive scintillator film (layer) (82) interleaved with a hydrogenous thermalizing media (§ 0050). Regarding the scintillating material comprising a material such as  $^6\text{LiZnS}$ , *Grodzins* specifically discloses that the material may comprise  $^6\text{LiF:ZnS}$  material, but that the material may more generally include any compound including  $^6\text{Li}$  and  $\text{ZnS}$  (§ 0030). Absent some degree of criticality a specific choice of  $^6\text{LiZnS}$  is viewed as an obvious design choice in view of such material including the generally recited materials.

Regarding claim 3, *Grodzins* further discloses that the thermalizing media comprises acrylic (§ 0050).

Regarding claim 4, *Grodzins* further discloses that the thermal neutron sensitive scintillator film has a layer thickness of about 0.5 mm (§ 0030).

Regarding claim 5, although *Grodzins* does not disclose the specific thickness of the thermalizing media layer, *Grodzins* does disclose that the particular thickness of the layer is a result effective variable that can be adjusted depending on the needs of the application so as to allow for maximum neutron detection efficiency (§ 0032).

Regarding claim 6, *Grodzins* further discloses a photosensor (26).

Regarding claim 8, although *Grodzins* does not disclose that the neutron detector may be configured as a portal detector, *Grodzins* does disclose that the detector has an advantage over existing detectors in being able to meet the growing need for effective detectors for radioactive weapons of mass destruction brought about by the rise of terrorism (§ 0002, 0004). Those skilled in the art appreciate that in addition to handheld instrument configurations for use in combating terrorism, other instrument configurations, such as portal configurations, are well known for use in combating terrorism, and absent some degree of criticality, would have been an obvious design choice.

Regarding claim 9, *Grodzins* discloses that the neutron detector may be a handheld instrument (see generally Fig. 3).

Regarding claims 10-14, 16-17, the apparatus as recited according to claims 10-14 is suggested by the apparatus suggested by *Grodzins* as applied to claims 1-6 above, and is rejected accordingly. The examiner notes that while the configuration disclosed by *Grodzins* in Fig. 3 shows only four acrylic layers, the actual number, such as five is viewed as a matter of routine design choice depending on the needs of the application.

Regarding claims 18-20, the apparatus as recited according to claims 18-20 is suggested by the apparatus suggested by *Grodzins* as applied to claims 10-14 above, and is rejected

Art Unit: 2884

accordingly. The examiner notes that while *Grodzins* does not specifically recite the use of a reflecting surface enveloping the interleaved layers and being tapered for guiding light to the photosensor, those skilled in the art appreciate that the use of reflecting materials and tapered light concentrators are well known for use in conjunction with scintillators and light guides so as to allow for efficient collection of light with minimal loss, and absent some degree of criticality, the use of such would have been a matter of routine design choice within the skill of a person of ordinary skill in the art.

6. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Grodzins* as applied above, and further in view of Koechner (US 4,942,302).

Regarding claims 7 and 15, although *Grodzins* does not disclose a wavelength shifter, those skilled in the art appreciate that it is well known in the art to employ wavelength shifters in conjunction with scintillators to allow for better matching of the output of the scintillator to the photosensor (see for example *Koechner* at col. 4, lines 18-21).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436. The examiner can normally be reached on Monday thru Friday from 10 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2884

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Albert J. Gagliardi  
Primary Examiner  
Art Unit 2884

AJG